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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/603,035	06/24/2003	Surajit Chaudhuri	303855.01	2365

22971	7590	01/31/2006

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EXAMINER
MIZRAHI, DIANE D

ART UNIT	PAPER NUMBER
2165	

DATE MAILED: 01/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	10/603,035	CHAUDHURI ET AL.
	Examiner	Art Unit
	DIANE D. MIZRAHI	2165

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____ .

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-46* is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-46* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>24 June 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____ .

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>8-6-03</u>.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____ .

III.   DETAILED ACTION

Claims 1-46 are presented for examination and are pending.

Drawings

The Examiner contends that the drawings submitted on June

24, 2003 are acceptable for examination proceedings.

Claim Rejections - 35 USC , 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process,
machine, manufacture, or composition of matter or any new and
useful improvement thereof, may obtain a patent therefore,
subject to the conditions and requirements of this title.

Claims 1-46 are rejected under 35 U.S.C. 101 because the

claims are directed to a non-statutory subject matter,

specifically, the claims are not directed towards the final

result that is "useful, tangible and concrete

(See State Street, 149 F.3d at 1373-74 USPQ2d at 1601-02).

According to the New Guidelines of October 26, 2005, which

states that "A claim limited to a machine or manufacture, which

has a practical application, is statutory. In most cases a

claim to a specific machine or manufacture will have a practical

application. See Alappat, 33 F.3d at 1544, 31 USPQ2d at 1557)…

a specific machine to produce a useful, concrete, and tangible

result and State Street, 149 F.3d at 1373-74 USPQ2d at 1601-02).

 (Interim Guidelines for Examination of Patent Applications for
Patent Subject Matter Eligibility
<http://rs6.net/tn.jsp?t=mdmd7pbab.0.kbg76pbab.p9qiiibab.7440&p=
http%3A%2F%2Fwww.uspto.gov%2Fweb%2Foffices%2Fpac%2Fdapp%2Fopla%2
Fpreognotice%2Fguidelines101_20051026.pdf>)

    Claims 24-46 are rejected under 35 U.S.C. 101 because the

claims are directed to a non-statutory subject matter,

specifically, directed towards "computer usable medium".

    According to Applicant's specification (Page 8 paragraph 1)

is evident that Applicant intends for "computer usable medium"

to include embodiments where the medium is not limited to the

media that the Office believes are capable of realizing the

underlying functionality of the instructions.

    Specifically, while the volatile and not-volatile

embodiments would be statutory, the transmission media as

described in the specification is not believed to be covered by

any of the statutory categories of invention nor would it enable

any underlying functionality to be realized. Note that deleting

subject matter from the specification may raise the issue of new

matter. However, rephrasing is permissible in accordance with

MPEP 2163.07.

Therefore, Examiner believes that the above listed claims

are nonstatutory.

Claim Rejections - 35 USC 103

The following is a quotation of 35 U.S.C. 103(a) which

forms the basis for all obviousness rejections set forth in this

Office action:

> (a) A patent may not be obtained though the invention is not identically
> disclosed or described as set forth in section 102 of this title, if the
> differences between the subject matter sought to be patented and the prior
> art are such that the subject matter as a whole would have been obvious at
> the time the invention was made to a person having ordinary skill in the
> art to which said subject matter pertains. Patentability shall not be
> negatived by the manner in which the invention was made.

Claims 1-9, 12-17, 20-32, 35-40, 43 and 44-46 are rejected

under 35 U.S.C. 103(a) as being unpatentable over H.V. Jagadish

et al. (ACM Publication, 1999 entitled, "Multi-Dimensional

Substring Selectivity Estimation" and Jagadish hereinafter)in

view of Freytag et al. (U.S. Patent# 6,738,755 B1 and Freytag

hereinafter).

Regarding Claim 1, Jagadish teaches estimating selectivity

of a given string predicate in a database query, comprising: a)

estimating selectivities of string ….. substrings of various

substring lengths; b) selecting a candidate substring for each

substring length based on estimated selectivities of the

substrings; c) combining the estimated selectivities of the candidate substrings; and d) returning the combined estimated selectivities of the candidate substrings as the estimated selectivity of the given string…. (pages 388-390).

Jagadish does not expressly teach predicate.

Freytag teaches predicate (col 6, lines 19-62).

It would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Jagadish with the teachings of Freytag to include the claimed, "predicate" with the motivation to minimize an estimated cost metric (Freytag, col 3,lines 1-3).

Regarding Claim 2, Jagadish storing selectivity information for the database and using stored selectivity information to estimate the selectivities of the substrings of various lengths (pages 388-390).

Regarding Claim 3, Jagadish teaches substring with a lowest estimated selectivity is selected as the candidate substring at each length (page 388).

Regarding Claim 4, Jagadish selectivities of substrings of a given maximum length and using the exact selectivities to estimate the selectivities of the substrings of various substring lengths (pages 388-390).

Regarding Claim 5, Jagadish teaches a range of the various substring lengths whose selectivities are estimated is between the given maximum length of the substrings whose selectivities are calculated exactly and the length of the given string … (pages 388-390) predicate.

Jagadish does not expressly teach predicate.

Freytag teaches predicate (col 6, lines 19-62).

It would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Jagadish with the teachings of Freytag to include the claimed, "predicate" with the motivation to minimize an estimated cost metric (Freytag, col 3,lines 1-3).

Regarding Claim 6, Jagadish teaches candidate substring for the length equal to the given maximum length of the substrings whose selectivities are calculated exactly is selected based on the exact selectivity of the substring (pages 388-390).

Regarding Claim 7, Jagadish teaches … table is constructed for substrings of a given maximum length and is accessed to estimate selectivities of substrings of various substring lengths (pages 390-391).

Regarding Claim 8, Jagadish   … estimator uses the exact selectivities to estimate the selectivities of the substrings of

various substring lengths (pages pages 388-390).

Regarding Claim 9, Jagadish teaches … of string values in a relation of the database are used to combine the estimated selectivities of the candidate substrings (pages 388-390).

Regarding Claim 12, Jagadish teaches … substrings at run time to estimate the string selectivity (page 396).

Jagadish does not expressly teach predicate.

Freytag teaches predicate (col 6, lines 19-62).

It would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Jagadish with the teachings of Freytag to include the claimed, "predicate" with the motivation to minimize an estimated cost metric (Freytag, col 3,lines 1-3).

Regarding Claim 13, Jagadish does not expressly teach predicate.

Freytag teaches predicate (col 6, lines 19-62).

It would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Jagadish with the teachings of Freytag to include the claimed, "predicate" with the motivation to minimize an estimated cost metric (Freytag, col 3,lines 1-3).

Regarding Claim 14, Jagadish teaches wildcard (page 397).

Jagadish does not expressly teach predicate.

Freytag teaches predicate (col 6, lines 19-62).

It would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Jagadish with the teachings of Freytag to include the claimed, "predicate" with the motivation to minimize an estimated cost metric (Freytag, col 3,lines 1-3).

Regarding Claim 15,   Jagadish does not expressly teach predicate.

Freytag teaches predicate (col 6, lines 19-62).

It would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the teachings of Jagadish with the teachings of Freytag to include the claimed, "predicate" with the motivation to minimize an estimated cost metric (Freytag, col 3,lines 1-3).

Regarding Claim 16, Jagdish teaches ….. length of candidate substring to combine the selectivities of the candidate substrings (page 388-390).

Regarding Claim 17, Jadadish teaches …. weights is learned from data sets of the database (pages 388-391)   .

Regarding Claims 20 and 43, the limitations of these claims is similar in scope to the rejected claims above and are therefore rejected as set forth above.

Regarding Claims 21-23, Jadadish using regression trees (i.e. reads on pruned trees) (pages 390-391).

Regarding Claims 24-32, 35-40, 43-36, the limitations are similar in scope to the rejected claims above and are therefore rejected as set forth above.

Claims 10-11, 18-19, 33-34 and 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over H.V. Jagadish et al. (ACM Publication, 1999 entitled, "Multi-Dimensional Substring Selectivity Estimation" and Jagadish hereinafter and Freytag et al. (U.S. Patent# 6,738,755 B1 and Freytag hereinafter) in further view of Chen et al. (US Patent No. 6,738,762 B1 and Chen hereinafter).

The teachings of Jagadish and Freytag have been discussed above.

Regarding Claims 10-11, 18-19, 33-34 and 41-42 the limitations of these claims are similar in scope to the rejected claims above. In addition, Jagadish and Freytag do not expressly teach workload.

Chen teaches workload (col 10, lines 17-45).

It would have been obvious to a person of ordinary skill in the art at the time of Applicant's invention to modify the

teachings of Jagadish and Freytag with the teachings of Chen to

include the claimed, "workload" with the motivation to obtain

fast and accurate estimates (Chen, col 1, lines 40-41).

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Other Prior Art Made of Record

The prior art made of record and not relied upon is

considered pertinent to Applicant's disclosure.   U.S. patents

and U.S. patent application publications will not be supplied

with Office actions.   Examiners advises the Applicant that the

cited U.S. patents and patent application publications are

available for download via the Office's PAIR.   As an alternate

source, all U.S. patents and patent application publications are

available on the USPTO web site (www.uspto.gov), from the Office

of Public Records and from commercial sources.   For the use of

the Office's PAIR system, Applicants may refer to the Electronic

Business Center (EBC) at http://www.uspto.gov/ebc/index.html or

1-866-217-9197.

Conclusion

Any inquiry concerning this communication or earlier

communications from the examiner should be directed to Diane D.

Mizrahi whose telephone number is 571-272-4079. The examiner

can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are

unsuccessful, the examiner's supervisor, Jeffrey Gaffin can be

reached on (571) 272-4146. The fax phone numbers for the

organization where this application or proceeding is assigned

are (703) 872-9306 for regular communications and (703) 305-3900

for After Final communications.

Any inquiry of a general nature or relating to the status

of this application or proceeding should be directed to the

receptionist whose telephone number is (703) 305-3900.

Diane Mizrahi
Primary Patent Examiner
Technology Center 2100

January 6, 2005